

US 19-74 to SR 1310. Commuters from Graham County can take US 19-74 toward Murphy and then turn onto SR 1310 (Wayah Road) in Macon County. This is approximately 52 miles in length. SR 1310 runs through Wayah State Game Refuge.

b. Emergency Vehicles

EMS service is not eliminated when the road is flooded or impassible. Both counties have a mutual aid agreement to respond to isolated areas near the county lines. Additionally, an EMS unit is being considered for the West Swain Volunteer Fire Department which is located at the junction of US 74 and SR 1113. Macon Medical Center in Franklin, N.C. is the preferred hospital in this region. However, in a life-threatening situation, EMS personnel would transport a patient to the nearest medical facility.

c. School Buses

Currently, no school buses from either county use the unpaved portion of Needmore Road for their routes.

B. Hydrology/Sedimentation

A hydraulic study was conducted on the Little Tennessee River along the project near the Macon/Swain County line. The study involved comparing the existing conditions of Needmore Road with proposed roadway improvements. The proposed improvements consisted of widening the lane widths and shoulders to NCDOT secondary road standards as well as raising the grade along this portion of Needmore Road that has a history of flooding and washing out. The hydraulic study consisted of conducting field surveys to establish cross sections and running a HEC-RAS model to compare the existing and proposed conditions. The elevations for the study used an assumed datum because the interest was in the difference in elevation between the road and the water surface elevation of the river during the various storm events. The model was run for storm events ranging from the two year storm to the 500 year storm. The study showed that portions of the road would be flooded during the 5 year storm and that the 2 year storm event was within six inches of overtopping the road. The difference in elevation between the existing and proposed models varied from 0.00 ft. to 0.06 ft. and the difference in velocity varied from 0.00 to 0.09 ft/sec. The study concluded that there will be no significant change in water surface elevations or velocities in the Little Tennessee River as a result of the proposed road improvements.

Sediment filled runoff from existing unpaved roads contributes to the overall sedimentation of streams in the project area, resulting from significant flooding events, and runoff of stormwater from regular rain events. Past maintenance records were used to estimate the amount of material lost into the Little Tennessee River on a yearly basis. The amount of sediment into the Little Tennessee River from Needmore Road is estimated to range from 70 tons to 372 tons annually. Converting Needmore Road to a paved facility would significantly reduce sedimentation into the Little Tennessee River from both the frequent flooding events on the roadway and typical stormwater runoff from the current gravel and dirt facility.